14. Tribe DALBERGIEAE

Trees, shrubs, or lianas, with hard wood. Leaves pulvinate, mostly imparipinnate; stipels absent; leaflets 5 to numerous, alternate or opposite, rarely 1–3-foliolate. Flowers in racemes or panicles, small; bracts and bracteoles usually small and caducous, rarely persistent. Calyx 5-toothed, upper lobes joined higher, sometimes spathaceous, 2-lipped or subtruncate. Standard generally without calluses. Stamens all connate into a sheath split along upper (adaxial) side, or vexillary filament free or absent, or sheath split also on lower side forming two bundles; anthers uniform, dorsifixed, dehiscent by slits or by pores. Ovary sessile to long stipitate, 1–to few ovuled. Legumes with 1(to few) specialized indehiscent seed-chambers, winged, drupaceous or flat and curved, eglandular. Seeds 1–3, globose to oblong-reniform.

About 26 genera (excluding genera of Aeschynomeneae) and ca. 825 species: distributed in the tropics; two genera and 30 species (14 endemic, one introduced) in China.

1a. Trees, shrubs, or woody climbers; corolla usually white, sometimes light green, light yellow, or purple; legume oblong, ligulate, elliptic, or strap-shaped, rarely half-moon-shaped ................................................................. 54. Dalbergia

1b. Trees; corolla yellow; legume orbicular, compressed, broadly winged around margin ....................................... 55. Pterocarpus

54. DALBERGIA Linnaeus f., Suppl. Pl. 52, 316. 1782, nom. cons.

Trees, shrubs, or woody climbers. Leaves alternate, imparipinnate; stipules often small and early caducous; leaflets alternate, rarely opposite, estipellate. Inflorescences terminal or axillary, racemes or panicles, usually numerous flowered; bracts and bracteoles usually small, caducous, rarely persistent. Flowers small. Calyx campanulate, 5-toothed; teeth unequal, rarely subequal, lowest tooth usually largest, upper pair usually wider than others and partially connate. Corolla white, pale green, or rarely purple; petals clawed; standard ovate, oblong, or orbicular; wings with base cuneate, truncate, or sagittate; keel often boat-shaped, ± united above. Stamens 9 or 10, monadelphous, usually united in an open sheath, or diadelphous and then in 2 bundles of 5 each (5+5), or 9 united and 1 free (9+1); anthers erect, small, dehiscent by short apical slits. Ovary stipitate, few ovuled; style usually incurved, long or short; stigma terminal, small. Fruit an indehiscent legume, of 4 types: (a) strongly flattened, translucent, raised over seeds ("samaroid"); (b) thicker, ± leathery, often with lenticels; (c) thick, ± woody; (b+c) when more than 1 seed develops, legume lomentaceous. Seeds reniform, compressed, those of legume types b, c, and b+c usually not visible from outside; radicle inflexed.

Between 100 and 120 species: tropical and subtropical regions of North and South America, Africa, and Asia; 29 species (14 endemic, one introduced) in China.

Due to insufficient data, Dalbergia tonkinensis (species no. 29) could not be included in the key.

Dalbergia esquirolia H. Léveillé (Fl. Kouy-Tchéou, 230. 1914–1915), described from Guizhou, could not be treated here because no material was seen by the present authors.

1a. Stamens 10, filaments connate at base, irregularly separated to incompletely 3–5-adelphous on upper part; leaflets (7 or)9 (or 11–13), ovate to ovate-lanceolate, 1.5–4 × 0.8–1.6 cm ................................................................. 28. D. polyantha

1b. Stamens 9 or 10, monadelphous or diadelphous.

2a. Stamens 10, diadelphous (5+5).

3a. Leaflets numerous (13–21); stipules large, leaflike, ovate-lanceolate or falcate-lanceolate; inflorescence densely brown villous, pubescent, or silky pubescent.

4a. Legume 2.5–5 × 0.6–1 cm; leaflets abaxially densely pubescent ................................................................. 25. D. sericea

4b. Legume 5–11 × 1.2–3.2 cm; leaflets sparsely appressed puberulent, gradually glabrous.

5a. Length of leaflet blade nearly 3 × width; legume wider, apex obtuse or broadly cuneate, base rounded or broadly cuneate ......................................................... 23. D. stipulacea

5b. Length of leaflet blade 1.5–2 × width; legume narrower, apex acute, base attenuate to cuneate ................................................................. 24. D. assamica

3b. Leaflets fewer (7–17); stipules small, not leaflike; inflorescence sparsely puberulent.

6a. Leaflets shortly acuminate, never emarginate at apex; standard obovate-oblong; corolla pink ........ 26. D. hainanensis

6b. Leaflets rounded, obtuse, or slightly emarginate at apex; standard orbicular; corolla white or light purple.

7a. Leaflet abaxial surface with finely reticulate veinlets; legume 16–23 mm wide ........................................ 11. D. volubilis

7b. Leaflet abaxial surface without obvious reticulate veinlets; legume narrow, 13–15 mm wide ....... 27. D. haenecia

2b. Stamens 9, occasionally 10, monadelphous.

8a. Leaflets less than 2 cm, numerous, usually more than 21 (21–41) (except D. tsoi occasionally with 17).
9a. Legume reddish brown when dry, strongly reticulate throughout; leaflets 17–27, elliptic to oblong ........ 1. D. tsoi
9b. Legume not reddish brown, finely reticulate everywhere or opposite seeds; leaflets 21–42, linear-oblong or narrowly oblong, 2.5–3 x as long as wide.
10a. Leaflets trapezoid-oblong, two sides of base asymmetric, one side rounded, other side cuneate; petals long clawed; inflorescence densely rusty puberulent; legume brown and shiny when dry ................................................................. 2. D. pinnata
10b. Leaflets symmetric at base (except D. millelittii with leaflets slightly asymmetric); petals shortly clawed; inflorescence somewhat hairy or glabrous; legume dull colored, not shiny when dry.
11a. Leaflets membranous, oblong, 8–15 mm, appressed brown silky pubescent on both surfaces; standard transversely elliptic ................................................................. 3. D. peishaensis
11b. Leaflets papery, linear-oblong or narrowly oblong, glabrous on both surfaces or hairy when young, glabrous when old; standard oblong-obovate, broadly obovate, or orbicular.
12a. Leaflets 31–41, obtuse or rounded at both ends; legume ca. 7.5 mm wide ............. 4. D. stenophylla
12b. Leaflets 21–35, truncate, emarginate at apex, cuneate or broadly cuneate at base; legume 10–20 mm wide.
13a. Standard oblong-obovate; legume reticulate opposite seeds ......................... 5. D. mimosoides
13b. Standard orbicular; legume veined throughout ..................................................... 6. D. millelittii
8b. Leaflets more than 2 cm (except D. hancei with leaflets 1–2 cm).
15a. Leaflets suborbicular or obcordate, length and width of blade subequal, apex rounded and shortly caudate, both surfaces glabrous and adaxially shiny when old; teeth of calyx unequal, lowest lanceolate, longer than others; legume faintly reticulate opposite seeds ................................................................................................. 7. D. sissoo
15b. Leaflets ovate, longer than wide, obtuse, slightly emarginate at apex, abaxially densely rusty pubescent; teeth of calyx subequal, triangular; legume distinctly reticulate throughout ........................................................................... 8. D. henryana
16a. Legume half-moon-shaped, less than 2.5 cm when 1-seeded; inflorescence subsessile; woody climbers growing in littoral region ........................................................................... 9. D. candenatensis
16b. Legume oblong, ligulate-oblong, or strap-shaped, longer than 3 cm; inflorescence with peduncle; plants not of littoral region.
17a. Teeth of calyx subequal in length, triangular, broadly triangular, ovate-triangular, or ovate.
18a. Standard not reflexed, obovate or elliptic; ovary shortly stipitate ....................... 10. D. hancei
18b. Standard reflexed, orbicular or elliptic; ovary long stipitate.
19a. Leaflets ovate-lanceolate, 7–10 cm, apex acute .............................................. 12. D. kingiana
19b. Leaflets ovate, elliptic, or oblong, 3.5–6 cm, apex obtuse, rounded, or emarginate.
20b. Trees; leaflets 9–13, base rounded; standard orbicular, base not auriculate ........................................................................... 14. D. burmanica
17b. Teeth of calyx unequal in length, lowest teeth lanceolate or oblong (D. rinosa with lowest tooth of calyx lanceolate, but subequal in length to others).
21a. Leaflets less than 4 cm (1–4 × 0.8–2 cm; though sometimes larger and up to 5.5 cm in D. ximengensis).
22a. Climbers or shrubs; standard oblong, obovate-oblong, or suborbicular.
23a. Large climbers; leaflets thinly leathery, glabrous, shiny adaxially, veinlets finely and closely reticulate, conspicuously prominent on both surfaces ................................................................................................. 15. D. dyeriana
23b. Shrubs; leaflets papery, appressed sparsely grayish white pubescent and veins slightly impressed adaxially ..................................................... 16. D. jingxiensis
22b. Trees; standard obovate or orbiculate.
24a. Leaflets (7–)11–13, leathery, ovate-elliptic or oblong, adaxially glabrous, terminal and lateral leaflets subequal in length .............................................. 17. D. cultrata
24b. Leaflets 7–9, thickly papery, elliptic or obovate, adaxially appressed pubescent, terminal and lateral leaflets very unequal in length (terminal leaflet often more than 4 x as large as lowest) ..................... 18. D. ximengensis

- Leaves 5–7 × 1.2–2 cm, with rounded, apiculate tip, distinctly and suture; stigma capitate. Legume oblong or linear, compressed, late, with claw narrow, ca. 0.8 mm. Stamens 9, monadelphous.
- Corolla ca. 3 mm; late, 5-toothed; teeth all ciliate, elliptic except lowest cucullate.
- Pedicels 1–1.5 mm, puberulent as calyx and bracteoles; basal bracteoles orbicular; apex rounded, emarginate. Panicles axillary, branches few, corveins and veinlets obscure, base rounded or broadly cuneate, 17(–30) × 5–8(–14) cm, both surfaces appressed pubescent, more densely so on midvein abaxially; standard obovate-oblong .......................... 19. D. yunnanensis


- Young branchlets puberulent. Leaves 4–6(–10) cm; rachis and petiole densely puberulent; stipules caducous, ovate; leaflets 21–41; petiolules short, subglabrous; blades narrowly linear-oblong, ca. 12 × 3 mm, both surfaces appressed sparsely puberulent when young, soon glabrous except abaxi-
ally on midvein, apex obtuse or rounded. Panicles axillary, 4–6 cm; peduncles, rachis, branches, and pedicels puberulent. Flowers small, 3–4 mm; bracteoles puberulent, basal persistent, lanceolate, epicalyx bracteoles embracing lower 1/3 of calyx tube, deciduous. Calyx campanulate, ca. 1.5 mm, sparsely puberulent; teeth short, upper pair obtuse, lateral acute, lowest longer than others, broadly lanceolate. Corolla white or pale yellow; petals shortly clawed; standard broadly ovate to suborbicular, emarginate; wings oblong; keel obovate, blade hastate on upper side below. Stamens 9, monadelphous; filaments alternately shorter and longer. Ovary long stipitate, sparsely pubescent along sutures, 3-ovuled; style short; stigma small. Legume stipitate to strap-shaped, 2.5–5 × ca. 0.75 cm, base attenuate to distinct stipe, apex subacute, 1- or 2-seeded. Seeds reniform, compressed. Fl. May–Jun, fr. Aug–Nov.

Among bushes in wet ravines. Guangxi, Guizhou, Hubei, Sichuan, Xizang, Yunnan, Zhejiang. [Vietnam].


象鼻藤 象鼻藤

Dalbergia millellii Bentham var. mimosoides (Franchet) Thothathri.

Shrubs, 4–6 m tall. Branches many, spreading; young shoots densely brown tomentose. Leaves 6–8(–10) cm; rachis, petiole, and petiolules densely pubescent initially, gradually glabrescent; stipules caducous, ovate, membranous; leaflets 21–35, linear-oblong, small, 6–12(–18) × 5–6 mm, both surfaces finely rusty pubescent especially abaxially on midvein when young, glabrous or nearly so when old, finely reticulate veins blackish when dry, base rounded or broadly cuneate, margin of young leaflets of flowering branches obscurely undulate, apex truncate, obtuse, or emarginate. Panicles axillary, shorter than leaves, 1–1.5 cm, with corymbose branches; peduncles, rachis, branches, and pedicels appressed pubescent. Flowers small, ca. 5 mm, slightly compact; bracteoles deciduous, ovate, pubescent. Calyx campanulate, sparsely puberulent; teeth ciliate, ovate except lowest lanceolate. Corolla white or pale yellow; petals shortly clawed; standard oblong-obovate, ovate, pubescent. Calyx campanulate, sparsely puberulent; teeth ciliate, ovate except lowest lanceolate. Corolla white or pale yellow; petals shortly clawed; standard broadly obovate, emarginate; wings obovate-oblong; keel elliptic. Ovary long stipitate, sparsely pubescent, 2- or 3-ovuled; style short; stigma small. Legume stipitate, oblong to linear, compressed, 4–6 × 1.2–1.6 cm, glabrous, leathery, reticulate veined throughout, but more conspicuously so opposite 1 seed, rarely 2-seeded, base broadly cuneate, apex obtuse or rounded. Seeds reniform, compressed, 8–12 × ca. 6 mm. Fl. May, fr. Aug.

● Sparse or dense forests, ravines; 300–800 m. Guangdong, Guangxi, Shaanxi, Zhejiang.


印度黄檀 印度黄檀

Trees, with rough, gray bark. Branches numerous, horizontally spreading; young shoots puberulent. Leaves 12–15 cm; stipules caducous, lanceolate; leaflets 3–5; petiolules 8–10 mm, initially puberulent, ultimately glabrous; blades green when young, shiny when old, suborbicular, occasionally rhombic-ovate, 3.5–6 cm, puberulent when young, glabrous when old, apex rounded, shortly caudate. Panicles axillary, short, ca. 7 cm; rachis and bracteoles puberulent. Flowers nearly sessile, fragrant; bracts caducous, lanceolate. Calyx campanulate, 6–7 mm, enclosed within 2 large, broadly ovate, membranous, very caducous bracteoles, outside puberulent, 5-toothed; teeth shorter than tube, upper pair rounded, lateral 2 subacute, shorter than lowest, lowest rather narrowly lanceolate. Corolla yellowish white; petals rather long clawed; standard broadly ovate, emarginate; wings and keel oblongate, base without auricles, cuneate, attenuate to claw. Stamens 9, monadelphous. Ovary oblong, pubescent, with rather long stipe ca. 4.5 mm, 4–6-ovuled; style very short; stigma capitulate. Legume pale brown when dry, linear-oblong to strap-shaped, 4–8 × 0.6–1.2 cm, leathery, glabrous, faintly veined opposite 1 or 2(or 3) seeds. Seeds reniform, compressed. Fl. Mar–Apr, fr. Jun–Nov.

Cultivated; 900–1500 m. Fujian, Guangdong, Hainan, Taiwan, Zhejiang [native to India; widely cultivated in the tropics].


蒙自黄檀 蒙自黄檀

 Woody climbers. Branches sometimes hooked, blackish when dry, glabrous. Leaves 4–5 cm; stipules caducous, narrowly lanceolate, 2–3 mm; petiole and petiolules glabrous; leaflets 23–35, small, closely set, linear or narrowly oblong, (4–)10–15 × (2–)3–5 mm, both surfaces glabrous, base rounded or obtuse, somewhat unequal on two sides, apex truncate, sometimes emarginate; distal ones often obovate or obovate-oblong. Panicles axillary, compact, 1–1.5 cm; peduncles, rachis, and branches very sparsely puberulent. Pedicel very short. Flowers minute, 2.5–3 mm; bracts persistent; bracteoles deciduous, ovate, ciliate, embracing lower 1/3 of calyx tube. Calyx campanulate, ca. 1 mm, nearly glabrous; teeth short, subequal in length, lateral ovate, upper 2 rounded, subconnate, obtuse except for lowest, lowest triangular, acute. Corolla white; petals shortly clawed; standard orbicular, emarginate; wings ovate-oblong; keel oblong. Stamens 9, monadelphous. Ovary stipitate, sparsely ploise, 2- or 3-ovuled; style short; stigma small. Legume stipitate, oblong to linear, compressed, 4–6 × 1.2–1.6 cm, glabrous, leathery, reticulate veined throughout, but more conspicuously so opposite 1 seed, rarely 2-seeded, base broadly cuneate, apex obtuse or rounded. Seeds reniform, compressed, 8–12 × ca. 6 mm. Fl. May, fr. Aug.

Cultivated; 900–1500 m. Fujian, Guangdong, Hainan, Taiwan, Zhejiang [native to India; widely cultivated in the tropics].

Hong Kong 黄檀 xiang gang hung tan

 Woody climbers. Branches sometimes hooked, blackish when dry, glabrous. Leaves 12–22 cm; rachis, petiole, and petiolules densely pubescent; leaflets 4 or 5, ovate, 6–8.5 × 3.5–4 cm, leathery, abaxially densely rusty pubescent, adaxially glabrous, base cuneate or rounded, apex obtuse, sometimes emarginate, acute when young; terminal leaflets largest. Panicles axillary, lax, (3.5–)6–8.5 cm; peduncles short, ca. 1 cm, rusty pubescent as
rachis, branches, and pedicels. Flowers 5–6 mm; bracts and bracteoles deciduous, ovate, puberulent, obtuse. Calyx campanulate, 3–4 mm, outside rusty tomentose, 5-toothed; lowest tooth longest, lanceolate, others subequal, triangular, obtuse, upper 2 subconnate. Corolla white; petals long clavated; standard reflexed, suborbicular, slightly emarginate, wings and keel auriculate at base; wings oblong. Stamens 9, monadelphous; filaments free in upper 1/4 and alternately shorter and longer. Ovary long stipitate, puberulent as stipe, 2-ovuled; style subulate, slender; stigma minute. Legume yellowish brown when dry, ligulate to strap-shaped, thinly leathery, finely reticulate throughout, somewhat shiny, 1- or 2-seeded. Fl. Mar–Apr, fr. Jun–Aug.

- Dense forests on mountain slopes, among bushes at bases of mountains; 700–1300 m. Guizhou, SE Yunnan.


弯枝黄檀 wan zhi huang tan

*Cassia candenatensis* Dennstedt, Schlüssel Hortus Malab. 32. 1818; *Dalbergia monosperma* Dalzell.

Woody climbers. Branches blackish when dry, glabrous, apex often twisting and spirally hooked. Leaves 6–7.5 cm; leaflets (3–)5–7; petiolules ca. 1.5 mm, slightly puberulent or subglabrous; blade abaxially glaucous, adaxially dark green, obovate-oblong, 1.5–3 × 1–2 cm, abaxially very sparsely appressed puberulent, adaxially glabrous, base cuneate, sometimes subrounded, apex round or obtuse, sometimes emarginate. Peduncles axillary, 2.5–5 cm, subacute or with very short peduncles; branches slightly puberulent; bracts ovate-lanceolate; bracteoles larger than bracts, broadly ovate, embracing lower 1/3 of calyx tube. Calyx broadly campanulate, subglabrous; teeth subequal, broadly triangular to ovate, obtuse, upper pair of teeth subconnate. Corolla white; petals long clavated; standard reflexed, oblong; wings obovate-oblong, sagitate on upper side; keel oblong, united above, auriculate on upper side below. Stamens 9 (or 10), monadelphous. Ovary stipitate, oblong, glabrous, 1 (or 2)-ovuled; style subulate, slender; stigma small. Legume shortly stipitate, half-moon-shaped, compressed, 2–2.4 cm when 1-seeded, 3.5–4 cm when 2-seeded, 1–1.2 cm wide, firmly leathery, ventral suture straight, dorsal suture arcuate, faintly reticulate throughout, not prominent opposite seeds. Seeds reniform, compressed, ca. 6 × 3 mm. Fl. May–Aug, fr. Jun–Nov.

Coastal areas, climbing on trees in forests; sea level to 200 m. SE and SW Guangdong, SE Guangxi [Bangladesh, Cambodia, Indonesia, Malaysia, Philippines, Sri Lanka, Thailand, Vietnam].


藤黄檀 teng huang tan

Woody climbers. Branches slender; young shoots slightly pubescent; branchlets sometimes hooked or twisted. Leaves 5–8 cm; stipules caducous, lanceolate, membranous; leaflets 7–13, narrowly oblong or obovate-oblong, 10–20 × 5–10 mm, both surfaces initially sparsely appressed pubescent, soon glabrous adaxially, persistently pubescent abaxially, base rounded or broadly cuneate, apex obtuse or rounded, emarginate. Flowers small, in axillary, compact, short panicles; bracts early deciduous, scaly, boat-shaped, imbricate, enclosing young inflorescence. Pedicle 1–2 mm; bracteoles deciduous, rusty puberulent, basal minute, lanceolate, epicalyicine pair ovate, enclosing base of calyx tube. Calyx broadly campanulate, ca. 3 mm, outside rusty puberulent; teeth broadly triangular, very short, ciliate, obtuse or rounded except for lowest, lowest rather longer, acute. Corolla greenish white, fragrant, ca. 6 mm, rather long clawed; standard elliptic, emarginate, base of blade truncate, auriculate, attenuate to broad claw; wings and keel oblong. Stamens 9 or sometimes 10, monadelphous, sometimes with a free vexillary stamen. Ovary shortly stipitate, linear, glabrous except for ciliate ventral suture; style short; stigma small. Legume distinctly stipitate, oblong or strap-shaped, compressed, 3–7 × 0.8–1.4 cm, glabrous, 1-seeded, rarely 2–4-seeded. Seeds reniform, compressed, ca. 8 × 5 mm. Fl. Mar–May, fr. Jun–Nov.

- Among bushes on mountain slopes, by streams along valleys; 200–1500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Jiangxi, Sichuan, Zhejiang.


南亚黄檀 nan ya huang tan

Woody climbers, large, occasionally erect. Branches glabrescent, twining or twisted into spiral hooks; branchlets puberulent, striate. Leaves 7–20 cm; leaflets 9–13, obovate to ovate-elliptic, 2.5–7 × 1.6–3 cm, glabrous, veinlets finely reticulate abaxially, base narrow, apex obtuse and mucronulate. Pedicels terminal, rarely axillary, copiously branched, 13.5–30 cm. Flowers 6–8 mm; bracts lanceolate. Calyx campanulate, outside rusty tomentose; teeth 5, lowest one lanceolate, much longer than rest, upper 2 subconnate. Corolla blue to lilac; standard orbiicular, reflexed; wings obliquely oblong, clawed; keel boat-shaped, clawed. Stamens 10, diadelphous (5+5), staminal sheath 4.5–5.5 mm; filaments free in upper 1/3. Ovary 4–5 mm, stipitate, pubescent at sutures and stipe, 2-ovuled; style slender; stigma minute. Legume indehiscent, oblong, rarely ovate-oblong, 5–9 × 1.6–2.3 cm, stalked, glabrous, uniformly reticulate, narrowed at base, obtuse to mucronate at apex. Seeds reniform, compressed, ca. 7 × 5 mm. Fl. Jan–May, fr. Mar–Jun.

Sparse forests, climbing on trees, among bushes; 100–700 m. SW Yunnan (Gengma) [Bangladesh, India, Myanmar, Sri Lanka].

This species was recorded from China by S. J. Li and H. Wu (J. Trop. Subtrop. Bot. 15: 171–172. 2007) based on *G. Forrest 12139* (BM, K).


滇南黄檀 dian nan huang tan

Shrubs. Branches puberulent, soon glabrous, lenticellate. Leaves 17–20 cm; rachis and petiole initially puberulent, later glabrous; leaflets 7–9; petiolules initially finely puberulent, ultimately glabrescent; blade abaxially pale green, ovate-lanceolate, 7–10 × 3–4 cm, lowest rather smaller than others, leathery, abaxially sparsely puberulent when young, soon glabrous, adaxially glabrous, base cuneate, apex acute. Pediciles axillary, short, 5–7 × ca. 5 cm; branches broadly spreading; peduncles, rachis, branches, and short pedicels rusty tomentose; bracts
deciduous. Calyx campanulate, extremely rusty tomentose; teeth subequal, triangular, upper 2 subconnate, broader. Corolla white; petals long clawed; standard reflexed, orbicular; keel half-moon-shaped, auriculate as elliptic wings. Stamens 9, monadelphous. Ovary long stipitate, oblong, glabrous, 2-ovuled; style subulate, slender; stigma minute. Legume unknown.

- Mountain slopes; ca. 1300 m. Yunnan (Simao).


缅甸黄檀

Climbing shrubs, large, occasionally erect. Branches black, long, glabrous. Leaves 12–17 cm; rachis and petioles appressed puberulent; leaflets 5–7, ovate or elliptic, 3.6–6 × 1.5–3 cm, subleathery, abaxially glaucous and minutely appressed puberulent, adaxially glabrous, base cuneate, apex obtuse, emarginate. Panicles axillary, ca. 4 × 2.5 cm; short peduncle and slender pedicels ca. 2.5 mm, rusty tomentose. Flowers ca. 8 mm, fragrant; bracts deciduous, oblong; bracteoles persistent, lanceolate. Calyx campanulate, outside rusty tomentose; teeth subequal, ovate-triangular, obtuse. Corolla white; petals long clawed; standard reflexed, orbicular, base shortly auriculate, emarginate; wings obovate-oblong, incurved auriculate on upper side below as keel; keel half-moon-shaped, with claws ca. as long as calyx. Stamens 9, monadelphous. Ovary long stipitate, glabrous, 2- or 3-ovuled; style subulate. Legume ligulate-oblong, 5–7.5 × ca. 1.5 cm, thinly leathery, 1- or 2-seeded. Seeds reniform, compressed, ca. 11 × 5 mm. Fl. Mar–Jun, fr. Jul–Oct.

Sparse forests, among bushes, climbing on trees; 100–700 m. Guangdong, Guangxi, Guizhou, Hainan, Taiwan [Vietnam].


缅甸黄檀

Trees, 7–10 m tall, with spreading branches, or occasionally climbers. Branches densely rusty puberulent. Leaves 12–17 cm; stipules very caducous, lanceolate, small; leaflets 9–13; petiolules 2–3 mm; blades narrowly ovate and acute when young, oblong and obtuse when mature, (2.5–)4–6 × 1.5–2 cm, lowest rather smaller than others, membranous, both surfaces initially silky pubescent, ultimately subglabrous adaxially, sparingly pubescent abaxially, base slightly unequal, apex rounded or emarginate. Panicles lateral, with corymbose branches, appearing shortly before leaves; peduncles, branches, rachis, and ca. 2 mm pedicels densely rusty pubescent. Flowers 6–8 mm; basal and epicalyceal bracts lanceolate. Calyx campanulate, ca. 3 mm, outside rusty pubescent; teeth subequal, acute, upper pair rather wider than lower 3. Corolla purple or (according to field notes) petals long clawed; standard orbicular, emarginate, reflexed; wings and keel with downward auricles on upper side below. Stamens 9, monadelphous. Ovary long stipitate, glabrous, 1–3-ovuled; style slender; stigma small. Legume distinctly stipitate, yellowish brown, ligulate-oblong, thin, (5–)7–9 × 1.5–2 cm, glabrous, acute and with an apiculate tip at apex when young, rounded at both ends when mature, reticulate throughout, 1- or 2-seeded. Seeds narrowly oblong, compressed, 10–12 × 6–7 mm. Fl. Apr, fr. Jun.

Mountain slopes, broad-leaved forests, by streams; 600–1700 m. Guizhou, Yunnan [Myanmar].


大金刚藤 da jin gang teng

Woody climbers, large. Branchlets rather slender, glabrous. Leaves 7–13 cm; leaflets (7–)9–15; petiolules 2–2.5 mm; blade adaxially shiny, obovate-oblong or oblong, 2.5–4(–5) × 1–2(–2.5) cm, thinly leathery, abaxially sparsely appressed pubescent, adaxially glabrous, veinlets finely closely reticulate, prominent on both surfaces, apex rounded or retuse, occasionally emarginate. Panicles axillary, lax, few flowered, 3–5 × ca. 3 cm; peduncles, branches, and pedicels puberulent. Pedicel 1.5–3 mm; bracts and bracteoles deciduous, oblong and lanceolate. Calyx campanulate, puberulent, soon glabrous; teeth triangular, obtuse, upper 2 widest, lowest longer than others, subacute. Corolla yellowish white; petals slightly long clawed; standard oblong, emarginate; wings obovate-oblong, without auricles; keel narrowly oblong, shortly auriculate on upper side below. Stamens 9, monadelphous; filaments free in upper 1/4. Ovary shortly stipitate, puberulent or subglabrous, 1–3-ovuled; style short, glabrous; stigma small. Legume distinctly stipitate, oblong or strap-shaped, compressed, 5–6(–9) × 1.2–2 cm, thinly leathery, finely but distinctly reticulate opposite 1(or 2) seeds, base cuneate, apex rounded, obtuse, or acute, with apiculate tip. Seeds oblong-reniform, ca. 10 × 5 mm. Fl. May.

- Mountain slopes, among bushes and thickets, along valleys; 700–1500 m. Gansu, Guizhou, Hubei, Hunan, Shaanxi, Sichuan, Yunnan, Zhejiang.


靖西黄檀 jing xi huang tan

Shrubs, 2–3 m tall. Branches spreading; branchlets grayish black, densely yellowish brown pubescent, glabrescent, lenticellate. Leaves 4–11 cm; petiole 8–12 mm, puberulent as rachis; leaflets 5–15, abaxially light green, adaxially green, oblong, 1.3–3.5 × 0.8–1.5 cm, abaxially sparsely appressed light brown pubescent and veins prominent, adaxially sparsely appressed grayish white pubescent and veins slightly impressed, base broadly cuneate or subrounded, margin revolute, apex rounded, obtuse, or emarginate, cuspitate; petiolules ca. 2 mm, densely light brown pubescent; terminal leaflet obovate-oblong. Panicles terminal and axillary, few branched, 2–5 × 1–3.5 cm, densely dirty brown pubescent. Flowers small, compact. Pedicel 1–2 mm. Calyx campanulate, 5–6 mm, densely blackish brown appressed hirsulous; tube ca. 4 mm, 5-toothed; teeth triangular or triangular-oblong, ca. 1 mm, lowest one longer than others, ca. 1.5 mm, inside densely pubescent, apex acuminate, rounded, or obtuse. Corolla white; petals subequal in length, clawed, claw 2–3 mm; standard obovate, orbicular, or suborbicular, sometimes cucullate, 3–4 × 2.25 mm, slightly unequally sided, apex rounded, obtuse, or emarginate; wings
oblong; keel obovate-oblong, as wings ca. 4 mm and auriculate on upper side below. Stamens 9, monadelphous, 4–5 mm; filaments alternately longer and shorter, occasionally among them 1 or 2 reduced and enlarged to petaloid. Ovary long stipitate, oblong, 1.5–2 mm, glabrous, 2- or 3-ovuled; style slender, ca. 2 mm; stigma small. Legume unknown. Fl. Jan–Feb.

- Rocky hills, thickets. Guangxi (Jingxi).


hei huang tan


Trees; wood red. Branches slender, slightly finely appressed puberulent, glabrescent, lenticellate. Leaves 10–15 cm; stipules caducous; leaflets (7–)11–13, ovate or elliptic, 2–4 × 1.2–2 cm, leathery, abaxially appressed pubescent, at length glabrescent, adaxially glabrous, apex rounded or emarginate, cuspitate. Panicles axillary and infra-axillary, 4–5 cm; branches 2–3 cm, pubescent. Pedicel ca. 2 mm, slender, puberulent; bracteoles linear, ca. 1 mm, acute. Calyx campanulate, 5-toothed; upper 2 teeth conical, subconnate, lateral 2 broadly triangular, acute, lowest tooth ca. 1.5 × as long as others. Corolla white; petals rather long clawed; standard broadly obovate or subreniform; wings elliptic; keel arcuate. Stamens (9 or)10, monadelphous. Ovary long stipitate, glabrous, 3-ovuled. Legume stipitate, oblong to strap-shaped, 6–10 × 0.9–1.5 cm, thinly leathery, finely reticulate opposite 1 or 2 seeds, both ends obtuse. Seeds reniform, compressed, ca. 10 × 6 mm. Fl. Feb, fr. Apr–Sep.

Mixed forests, mountain slopes; ca. 1700 m. Yunnan (Simao) [Laos, Myanmar, Vietnam].


_dian qian huang tan_

_Trees, ca. 8 m tall. Branchlets lenticellate, pubescent. Leaves 10–14 cm; stipules caducous; leaflets 7–9, elliptic or obovate, 1.3–5.5 × 0.7–3.5 cm, thickly papery, both surfaces appressed pubescent, densely so on midvein abaxially, base rounded or cuneate, rarely subcordate, apex emarginate, rarely rounded and cuspitate. Panicles terminal, 5–7 cm, pubescent; branches 2–4 cm. Pedicel 0.5–1 mm, pubescent; bracteoles ovate, 0.8–1 mm, apex obtuse. Calyx campanulate, ca. 2 mm, outside pubescent, 5-toothed; upper 2 ovate, ca. 1 mm, lateral 2 oblong, 0.8–0.9 mm, apex obtuse, lowest one lanceolate, ca. 1.3 mm. Corolla white; petals clawed; standard obcordate, 3.3–3.5 mm; wings oblong-obovate, 2.7–2.9 mm; keel obliquely elliptic, 2.4–2.6 mm. Stamens 10, monadelphous. Ovary stipitate, pubescent on ventral suture, 2-ovuled. Legume oblong, 5.5–9.5 × 1.5–2.2 cm, base cuneate or attenuate, apex obtuse, cuspitate, valves thinly leathery, reticulate, 1- or 2-seeded. Seeds reniform, compressed, 8–13 × 5–9 mm. Fl. Apr, fr. Jul–Oct.

- Forests; ca. 1200 m. Yunnan (Ximeng).


_dian qian huang tan_

_Dalbergia collettii_ Prain; _D. yunnanensis_ var. _collettii_ (Prain) Thothathri.

Wody climbers, large, sometimes erect shrubs or small trees. Stems subsarmentose; branches numerous, spreading, some occasionally reduced to spiral-hooked. Leaves 20–30 cm; rachis puberulent; stipules caducous; leaflets (13–)15–19; petals ca. 5 mm, pubescent; blades oblong, elliptic-oblong, or ovate, 2.5–5(–7.5) × 1–2(–3.3) cm, subleathery or membranous, both surfaces finely appressed pubescent, more densely so on midvein abaxially, both ends rounded, occasionally apex obtuse, emarginate. Panicles terminal, often extending into axils of upper leaves, compact, cymose; peduncles and branches puberulent. Flowers shortly pedicellate; bracteoles deciduous, ovate, membranous. Calyx campanulate, outside sparsely pubescent, 5-toothed; teeth with ciliate margins, lowest oblong, apex rounded, longer than others, others subequal and ca. as long as tube, upper 2 subconnate. Corolla white; standard broadly obovate-oblong, emarginate, cuneate base attenuate to short, broad claw; wings obovate-oblong; keel half-moon-shaped, slightly auriculate on upper side below, long, narrowly clawed as wings. Stamens 9, monadelphous; filaments free on upper side, alternately shorter and longer. Ovary long stipitate, glabrous or puberulent along suture, 2- or 3-ovuled; style short; stigma capitate. Legume oblong or elliptic, 3.5–6.5 × 2–2.5 cm, leathery, glabrous, distinctly reticulate opposite 1 seed or occasionally 2 or 3 seeds. Seeds orbicular-reniform, compressed, ca. 12 × 7 mm. Fl. Apr–Jun, fr. Aug–Oct.

Forests, sparse forests, thickets, mountain slopes; 1300–2200 m. Guangxi, Guizhou, Sichuan, Yunnan [Myanmar].


_dun ye huang tan_


_Trees, 13–17 m tall. Branches spreading; young shoots pendulous, glabrous. Leaves 20–30 cm; stipules early caducous; leaflets 5–7; petioles ca. 5 mm; blades elliptic or obovate, sometimes basal suborbicular, subleathery, terminal one largest, 5–14 × 4.5–8 cm, both surfaces glabrous, both ends rounded or sometimes apex emarginate and base broadly cuneate. Panicles terminal or axillary, 15–20 × 12–15 cm; peduncles and pedicels yellowish puberulent; bracts and bracteoles ovate, puberulent; bracteoles ca. 1/2 as long as calyx, caducous. Calyx campanulate, 5-toothed; teeth ovate, shorter than tube, obtuse, lowest tooth slightly longer than others. Corolla pale yellow; petals slightly long clawed; standard oblong, emarginate; wings and keel with downward short auricles on upper side below. Stamens 10, monadelphous; filaments alternately shorter and longer. Ovary long stipitate, elliptic, glabrous, 3-ovuled; style long; stigma small. Legume oblong to strap-shaped, 4–8 × 1–1.5 cm, leathery, distinctly reticulate opposite 1 or 2 seeds. Seeds reniform, ca. 10 × 6 mm; testa brown, smooth. Fl. Mar, fr. Jun–Aug.

降香黄檀  jiang xiang huang tan

Trees, 10–15 m tall, glabrous except for young shoots; inflorescence and ovary puberulent. Bark brown or pale brown, rough, longitudinally splitting; branchlets with small, dense lenticels. Leaves 12–25 cm; stipules caducous; petiole 1.5–3 cm; leaflets (7–)9–11(–13); petiolules 3–5 mm; blades ovate or elliptic, (2.5–)4–7(–9) × 2–3.5 cm, distal longest, basal pair ca. 1/3 as long as distal, subleathery, base rounded or broadly cuneate, apex obtuse to acuminate. Panicles axillary, 8–10 × 6–7 cm; peduncles 3–5 cm. Flowers ca. 5 mm, initially aggregated at apices of corymbose branches of inflorescence, lax afterward; bracts subtriangular, ca. 0.5 mm; bracteoles broadly ovate, ca. as long as ca. 1 mm pedicels. Calyx campanulate, ca. 2 mm, 5-toothed; lowest tooth lanceolate, longer than others, other teeth broadly ovate, acute. Corolla creamy white or pale yellowish; petals subequal in length, clawed; standard obovate-oblong, emarginate; wings obovate or oblong; keel half-moon-shaped, arcuate on lower side. Stamens 9, monadelphous. Ovary narrowly elliptic, 1- or 2-ovuled; style slender; stigma standard obovate-oblong, 1(or 2)-ovuled; style ender; stigma slend small. Legume broadly ligulate to ovoid or elliptic, (6.5–)9–11 × 3.2(–4) cm, firmly leathery, glabrous, not veined except sometimes opposite seed where mesocarp is much thickened, base cuneate or rounded, apex obtuse or rounded, 1-seeded, very rarely 2-seeded. Seeds reniform, compressed. Fl. Apr–Jun, fr. Jul–Dec.


多裂黄檀  duo lie huang tan

*Dalbergia discolor* Blume ex Miqel; *D. mengsuoensis* Y. Qian.

Woody climbers, sometimes erect shrubs or small trees, 4–6(–10) m tall. Leaves 10–20 cm; rachis and pedirole puberulent; leaflets 5–9; petiolules puberulent; blade obovate, ovate, or elliptic, (3–)5–8 × (2–)2.5–5 cm, firmly papery, abaxially sparsely puberulent, adaxially glabrous and with dense, prominent veinlets, base rounded or broadly cuneate, apex acute, obtuse, or emarginate, cuspitate. Panicles terminal or sometimes extending into axils of uppermost leaves, 5–25 × 4–12 cm, with cymose, dichotomous branches. Flowers minute, ca. 3 mm; bracts and bracteoles persistent, ovate-lanceolate, ca. 1/2 as long as calyx tube. Calyx campanulate, 5-toothed; teeth subequal, rounded or obtuse except lowest rather longer and lanceolate. Corolla white or yellowish green; petals shortly clawed; standard obovate-oblong, emarginate; wings obovate or elliptic; keel half-moon-shaped. Stamens 9(or 10), monadelphous. Ovary stipitate, oblong, puberulent, 1- or 2-ovuled; style short. Legume oblong or sometimes elliptic, 5–8 × 2–4 cm, leathery, glabrous, reticulate throughout but strongly so opposite 1(or 2) seeds, base broadly cuneate, apex acute or obtuse. Seeds reniform, much compressed, ca. 12 × 6 mm; testa brown, shiny. Fl. Apr–Jun, fr. Jul–Dec.


托叶黄檀  tuo ye huang tan

Woody climbers, large, sometimes small trees. Bark brown; branches spreading. Leaves 15–20 cm; stipules early caducous, ovate-lanceolate to lanceolate, membranous; leaflets 17–21; petiolules 1.5–2 mm; blades oblong to obovate-oblong, 2.8–3.5 × 1–1.2(–2) cm, lowest sometimes elliptic, 1.2–1.5 × ca. 1 cm, thinly papery, abaxially sparsely appressed puberulent, adaxially glabrous, base broadly cuneate or rounded, apex acute, ultimately rounded or obtuse, sometimes emarginate. Panicles in axils of leaves, which at apex of branchlets rise among clustered, scalelike, early-deciduous bracts; peduncle, rachis, branches, and bracts appressed brown pubescent, lower part of inflorescence with many scattered, ovate, membranous, empty bracts. Bracts of flowers smaller than inflorescence bracts; bracteoles obovate, enclosing ca. 2/3 of calyx. Calyx campanulate, puberulent; teeth ovate, shorter than tube except lowest ca. as long as tube. Corolla pale blue or pale purplish red; petals distinctly clawed; standard orbicular, slightly emarginate; wings with downward auricles on upper side below. Stamens 10, diadelphous (5+5). Ovary glabrous except for pubescent long stipe, 1(or 2)-ovuled; style slender; stigma small. Legume broadly ligulate to ovoid or elliptic, (6.5–)9–11 × 3(–4) cm, firmly leathery, glabrous, not veined except sometimes opposite seed where mesocarp is much thickened, base cuneate or rounded, apex obtuse or rounded, 1-seeded, very rarely 2-seeded. Seeds reniform, ca. 15 × 8 mm. Fl. Apr–May, fr. Aug–Jan.

Open forests, ravines to mountain summits; 700–1700 m. Yunnan [Cambodia, NE India, Laos, Malaysia, Myanmar, Thailand, Vietnam].


秋叶  yang qing

*Dalbergia balansae* Prain; *D. lanceolaria* Linnaeus f. var. *assamica* (Bentham) Thothathri; *D. szemaoensis* Prain.

Trees, 7–10 m tall. Branches horizontally spreading. Leaves 25–30 cm; stipules caducous, large, leaflike, ovate to ovate-lanceolate, ca. 10 × 6 mm; leaflets 13–21; petiolules ca. 5 mm, puberulent, soon glabrous; blade oblong or oblong-elliptic, 3–5(–6) × 1.5–2.5(–3) cm, papery, both surfaces sparsely appressed puberulent, but soon glabrous adaxially, with close, finely, slightly prominent reticulate veinlets on both surfaces, base rounded or cuneate, apex obtuse, rounded or emarginate. Panicles axillary, lax, 10–15 × 7.5–10 cm; peduncles, branches, and pedicels densely rusty puberulent; bracts and bracteoles deciduous, ovate, puberulent. Flowers 6–8 mm. Calyx campanulate, 5-toothed; lowest tooth longer than tube and ca. 2 × as long as triangular, acute others, upper 2 teeth subconnate. Corolla white, with purple stripes inside; petals long clawed; standard reflexed, orbicular, emarginate, base slightly thickened;
wings broadly ovate; keel half-moon-shaped, with downward auricles on upper side below as wings. Stamens 10, diadelphous (5+5); filaments free in upper 1/3, alternately shorter and longer. Ovary stipitate, pubescent, 1–4-ovuled; style subulate, slender; stigma minute. Legume broadly ligulate or oblong to strap-shaped, 5–9 × 1.2–1.8(–2.5) cm, leathery, base attenuate, cuneate, apex acute, inconspicuously reticulate opposite 1 or 2(–4) seeds. Seeds reniform, compressed, ca. 6 × 2.5 mm. Fl. Apr–Jul, fr. Sep–Dec.

Mixed forests, open forests, among bushes, mountain slopes, riversides, wastelands beside villages; 300–1700 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Sichuan, Yunnan, Zhejiang [India (Sikkim), Laos, Myanmar, Thailand, Vietnam].

One of us (Chen) prefers to recognize Dalbergia assamica and D. balansae as separate species.


毛叶黄檀 mao ye huang tan

Dalbergia hircina Buchanan-Hamilton ex Bentham.

Trees, 5–6 m tall. Young shoots silky puberulent, gradually glabrous. Leaves 15–25 cm; stipules caducous, subfalcate-lanceolate, silky puberulent; leaflets 17–21, ovate or oblong, 2.5–5 × 2–2.5 cm, papery, abaxially rather densely puberulent, adaxially appressed puberulent, base rounded or cuneate, apex slightly obtuse. Panicles axillary, rather shorter than leaves, 2.5–5 × 1.2–2 cm; peduncles, branches, and pedicels densely silky puberulent. Calyx campanulate, densely puberulent, 5-toothed; teeth obtuse, shorter than tube except lowermost lanceolate and ca. as long as tube. Corolla white; petals rather long clawed; standard suborbicular, emarginate. Stamens 10, diadelphous (5+5). Ovary shortly stipitate, pubescent, 4–5 ovuled; style slender; stigma capitate, small. Legume shortly stipitate, linear, densely puberulent except on style, 1–3-ovuled. Legume straight or slightly curved, oblong, oblanceolate, or strap-shaped, 5–9 × 1.5–1.8 cm, brown puberulent, obscurely prominent and reticulate opposite 1(or 2) seeds, base cuneate, attenuate to a short stipe, apex acute. Seeds reniform, compressed. Fl. Mar–Apr, fr. May–Jul.

● Sparse or dense forests, mountain slopes; sea level to 700 m. Hainan.


黄檀 huang tan

Dalbergia hupeana var. bauhinifolia Pampanini; D. saccodotum Prain.

Trees, 10–20 m tall. Bark dull gray; young shoots pale green, glabrous. Leaves 15–25 cm; leaflets 7–11, elliptic to oblong-elliptic, 3.5–6 × 2.5–4 cm, subleathery, both surfaces glabrous, shiny adaxially, veins prominent, base rounded or broadly cuneate, apex obtuse or slightly emarginate. Panicles terminal or extending into axes of uppermost leaves, 15–20 × 10–20 cm, sparsely rusty puberulent. Flowers 6–7 mm. Pedicel ca. 5 mm, sparsely rusty puberulent as calyx; bracts and bracteoles deciduous, ovate, pubescent. Calyx campanulate, 2–3 mm, 5-toothed; upper pair of teeth rounded, subcordate, lateral 2 smaller, ovate, lowest tooth lanceolate, ca. 2 × as long as others. Corolla white or light purple; petals clawed; standard orbicular, emarginate; wings obovate and half-moon-shaped; keel auriculate on upper side below. Stamens 10, diadelphous (5+5). Ovary shortly stipitate, glabrous except at base and stipe, 2- or 3-ovuled; style slender; stigma capitule, small. Legume oblong or broadly ligulate, 4–7 × 1.3–1.5 cm, thinly leathery, reticulate opposite 1 or 2(or 3) seeds, base attenuate to stipe, apex acute. Seeds reniform, 7–14 × 5–9 mm. Fl. May–Jul.

● Forests, among bushes on mountain slopes, ravines, by streams, woodland slopes; 800–1400 m. Anhui, Fujian, Guangdong, Guangxi, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shandong, Shanxi, Sichuan, Yunnan, Zhejiang.


多体蕊黄檀 duo ti rui huang tan

Trees, 4–10 m tall. Leaves 10–20 cm; rachis and petioles densely rusty tomentose; stipules very caducous, ovate-lanceolate; leaflets (7 or)9(9 or 11–13); petiolules ca. 3 mm, densely rusty tomentose; blades ovate to ovate-lanceolate, 1.5–4(–7) × 0.8–1.6(–2.8) cm, firmly papery, abaxially glabrescent or sparsely appressed puberulent, adaxially glabrous except for puberulent midvein, base cuneate or rounded, apex acuminate or obtuse, sometimes mucronate. Panicles axillary or infra-axillary, rather compact, ca. 6 × 5.5 cm; pedicels slightly stout, glabrous. Pedicel ca. 5 mm; bracts ovate; bracteoles deciduous, lanceolate, sparsely pubescent. Calyx campanulate, 5 mm; tube outside glabrous below, sparsely puberulent above, 5-toothed; teeth ciliate, unequal, lowest lanceolate, ca. as long as tube and longer than others, lateral 2 triangular; upper pair ovate, subconnate. Corolla white; petals distinctly striate; standard broadly ovate, base attenuate to short, broad claw; oblong
wings and half-moon-shaped keel with downward broad auricles on upper side below. Stamens 10; filaments connate at base, irregularly separated to incompletely 3–5-adelpous on upper part. Ovary glabrous except for pubescent long stipe, 3- or 4-ovuled; style subulate-conical; stigma minute. Legume oblong to strap-shaped, (4–)7–9.5 × 1.5–2.8 cm, leathery, glabrous except for short stipe, distinctly reticulate opposite 1 or 2 seeds. Seeds reniform to subreniform-oblong, compressed, ca. 9 × 4 mm; testa black, shiny. Fl. Mar, fr. Apr–May.

Mountain slopes, thickets, bushes; 1000–2000 m. Guangxi, Guizhou, Yunnan [N Vietnam].

29. Dalbergia tonkinensis

Trees, 5–13 m tall. Leaves 9–20 cm; rachis glabrous; stipules caducous, small, tawny puberulent; leaflets (7–)9–11; peti- lules glabrous; blades ovate, 4–9 × (1.8–)3–5 cm, subleathery, sparsely puberulent when young, soon glabrous, base rounded, apex shortly acuminate. Panicles corymbose, axillary, ca. 5 × 3.8 cm. Flowers white, fragrant. Legume distinctly stipitate, ovoid or oblong, 5–7.5 × ca. 2 cm, reticulate opposite seeds, base cuneate, apex subacute. Seeds reniform, compressed, ca. 9 × 5 mm.

Hainan [N Vietnam].

The present authors have seen no material of this species from China.

55. PTEROCARPUS

Trees. Branches spreading, glabrous to pubescent. Leaves alternate, imparipinnate; stipules small, caducous; stipels absent; leaflets alternate, rarely subopposite. Inflorescence a simple raceme to a lax, terminal or axillary panicle. Flowers yellow; bracts and bracteoles small, caducous. Pedicel articulate. Calyx often incurved, obconical, 5-toothed; teeth short, upper 2 ± connate. Corolla papilionaceous, exserted beyond calyx; petals long clawed; standard ovate to orbicular, as keel crisped on margin. Stamens 10, monadelphous to diadelphous (5+5 or 9+1), staminal sheath split open dorsally; anthers versatile. Ovary stipitate or sessile, 2–6-ovuled; style incurved, filiform, glabrous; stigma terminal. Legume indehiscent, orbicular, compressed, broadly hardened winged around margin, usually 1-seeded; style persistent, incurved. Seeds oblong or subreniform, hilum small.

About 30 species: pantropical with the exception of Australia, with the greatest diversity in Africa; one species in China.


Trees, 15–25 m tall. Bark grayish. Leaves 15–30 cm; stipules early caducous; stipules 4–7 mm; rachis and peti- lules glabrous; leaflets 5–(7–11), ovate-elliptic, 5–11 × 3.5–5.5 cm, thinly papery, both surfaces glabrous, veins slender, lateral veins 6–8 pairs, base truncate, margin entire, apex shortly acuminate. Inflorescence a raceme or panicle, mostly axillary, rarely ter-

inal, 10–18 cm, puberulent. Flowers 1–1.5 cm; bracteoles 2, linear-oblong, at base of calyx. Pedicel 7–10 mm, slender. Ca-

lyx campanulate, 4–6 mm, appressed brown silky; teeth broadly triangular, ca. 1 mm, 2 larger than others. Corolla yellow; petals long clawed; standard ovate-orbicular to oblong, crisped at margin; wings oblong, ca. as long as standard; keel narrowly oblong, smaller than wings. Stamens 10, diadelphous (9+1), sheath 8–9 mm, vexillary filament free to base, filaments of varying heights; anthers versatile. Ovary shortly stipitate, ob-
long, 7–8 mm, densely pubescent; ovules 2; style curved; stigma minute. Legume orbicular, 4–4.5 × 3.5–4.5 cm, shortly stalked, flat, slightly hairy and reticulate opposite seed, 1-seeded, broadly winged around margin, wing to 2 cm wide. Seed brownish, reniform, narrow and oblique. Fl. Mar–Apr, fr. Apr–May.

Open forests on slopes, cultivated in villages and gardens. Guang-
dong, Taiwan, Yunnan [India, Indonesia, Malaysia, Myanmar, Papua New Guinea, Philippines, Thailand, Vietnam; Pacific islands].